Florida Bay and the Florida Keys Connections

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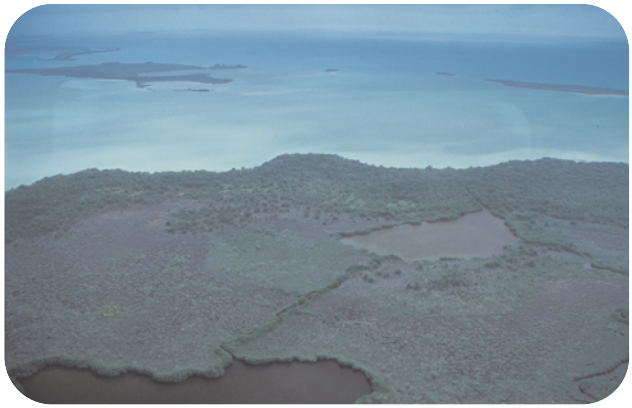
Although the Comprehensive Everglades Restoration Plan (CERP) is primarily designed to restore a more natural sheet flow of high quality water, scientists and managers realize that this altered flow will affect Florida Bay and the Keys. Currently, there are two initiatives in CERP designed to address these issues: 1) the Florida Bay and Florida Keys Feasibility Study and 2) the Florida Keys Tidal Restoration Project.

Florida Bay and Florida Keys Feasibility Study

The Florida Bay and Florida Keys Feasibility Study, seeks to evaluate information on the "downstream" effects of increased freshwater flows through the Everglades. The study will assemble existing data and use computer models to determine the quantity, quality, timing, and distribution of freshwater flows required to meet restoration targets. It will help make predictions on salinity variations from the expected future changes in freshwater flow. Currently, restoration targets and ecological performance measures are being developed. If results of the models indicate the that predicted effects are undesirable, the study will identify and evaluate alternative flow regimes that eliminate or minimize undesirable changes. The study will finish in late 2005, and it will cost about $6 million.



Waters from the Everglades on the mainland meet Florida Bay at the southern tip of the Florida peninsula. The effects of increased water flows on Florida Bay and the Keys will be assessed in the feasibility study. (Photo: Heather Dine)

Florida Keys Tidal Restoration Project

In addition to being connected to the mainland by freshwater flow, ecosystems in Florida Bay and the Florida Keys are connected to the Atlantic Ocean by tidal exchanges. A second initiative under CERP, the Florida Keys Tidal Restoration Project, will restore a more natural connection between Florida Bay and the Atlantic Ocean through a tidal pass that was blocked during construction of the Flagler railroad in the early 1900s. Water flow between many of the Keys was diminished by the construction of causeways for the railroad, and in some places, tidal circulation has been cut off completely.

Reduced tidal circulation leads to many undesirable changes. Higher water temperatures, higher salinities, lower water clarity, and lower concentrations of dissolved oxygen harm seagrasses, corals, fish, and other plants and animals. Less tidal exchange also results in a build up of silt and debris that damages habitats and prevents larvae, fish, and other animals from moving between bay and ocean habitats in the way they formerly dispersed.

An aerial view of a portion of the seven-mile bridge shows the tidal cut between Vaca Key and Pigeon Key. Tidal waters flow through the cuts between the Keys, connecting the Atlantic Ocean and Florida Bay.

A creek south of Mile Marker 56 between Fat Deer Key and Long Point Key has been selected for the pilot project. This site was selected since it will benefit the most environmentally in comparison to other locations that were evaluated. This creek currently has no flow between Florida Bay and the Atlantic Ocean and is an area where there is significant silt and debris build up. It has been identified and described as a "dead zone."

These two initiatives represent only one component of the overall plan to restore and maintain healthy ecosystems in Florida Bay and the Florida Keys. For more information on these studies and other CERP projects visit *www.evergladesplan.org.*

Note: This article appeared in the Spring/Summer 2004 issue of the newsletter of the Florida Keys National Marine Sanctuary, **Sounding Line.** For more information, visit: floridakeys.noaa.gov.